Author Index

Abramowitz, S., 1449
Ahern, T. J., 1527
Akimoto, H., 783
Alam, F., 411
Albrecht, A. C., 109
Ambrus, A., 747
Angell, C. A., 1387
Anisuzzaman, A. K. M., 411
Ariu, K., 1221
Arvia, A. J., 1599
Atsuya, I., 1221

Baer, E., 961
Bai, Xu, 1591
Baker, J., 283
Ball, K., 535
Bard, A. J., 569
Barone, G. (ed.) 1313–1566, iii, iv
Barrio, J. R., 1269, 1290
Barth, R. F., 411
Barthel, J., 1473
Barton, D. H. R., 1567
Battistel, E., 1483
Bauer, S., 855
Beck, J. S., 407
Beecher, G. R., 71
Berg, D. J., 845
Bernhard, K., 35
Bianchi, D., 1483
Bianchini, C., 829
Biemann, K., 1637
Bienvenu, J., 1111
Bischof, S., 89
Block, J. H., 697
Bogard, M., 1123
Boleslawski, M. P., 365
Bolzan, A. E., 1599
Bonini, P., 1089
Bonneau, R., 289
Bouabdillah, D., 1491
Bowers, B., 483
Bregadze, V. I., 357, 835
Britton, G. (ed.) 1–176, iii, iv, 101
Brown, G. R. (ed.) 917–1080
Brown, H. C., 307
Bruce, S. S., 1415
Brüschweiler, H., 1153
Bubnov, Yu. N., 361
Buchner, R., 1473
Buckley, T. J., 1415
Burgess, J., 1677
Bursten, B. E., 839
Buys, M., 747
Bycroft, M., 187

Cabani, S., 1455
Cabib, E., 483
Capolaghi, B., 1123
Carmichael, I., 289
Carrera, P., 1089
Cassidy, J. J., 961
Castonguay, L. A., 867
Castro Luna, A. M., 1599
Caulfield, T. J., 555
Ceccanti, N., 1455
Chao, T-M., 283
Chase, M. W., Jr., 1449
Chen, X., 1419
Chen, Xiangning, 1591
Chen, Y., 1015
Chisholm, M. H., 665
Choe, C. R., 1793
Christie, I., 1147
Churney, K. L., 1415
Clausse, D., 1491
Clementi, E., 1327
Cleven, R. F. M. J., 1251
Cochet, N., 1491
Colbert, J. C., 1415
Commission on Agrochemicals, 747
Commission on Atmospheric Chemistry, 763
Commission on Atomic Weights and Isotopic Abundances, 975
Commission on Colloid and Surface Chemistry including Catalysis, 895, 1227
Commission on Electroanalytical Chemistry, 1647
Commission on Electrochemistry, 569, 711, 1759
Commission on Equilibrium Data, 597, 1015
Commission on General Aspects of Analytical Chemistry, 639, 1247, 1805
Commission on Microchemical Techniques and Trace Analysis, 1627
Commission on Molecular Structure and Spectroscopy, 887, 1541, 1781
Commission on Oils, Fats, and Derivatives, 1153, 1163, 1173, 1183, 1191, 1659
Commission on Photochemistry, 289, 1003
Commission on Polymer Characterization and Properties, 1609, 1793
Commission on Quantities and Units in Clinical Chemistry, 1307
Commission on Radiochemistry and Nuclear Techniques, 427, 1269
Commission on Spectrochemical and other Optical Procedures for Analysis, 735
Commission on Water Chemistry, 1667
Commissions on Automation and Clinical Chemical Techniques & Analytical Nomenclature, 301
Commissions on Electroanalytical Chemistry and Equilibrium Data, 1251
Commissions on Environmental Analytical Chemistry and Electroanalytical Chemistry, 907
Connick, W. B., 335
Cremonesi, L., 1089

d'Argy, R., 1269, 1271
Danil de Namor, A. F., 1435
Das Gupta, S., 483

Davies, B. H., 131
Davison, W., 907
De Angelis, L., 1199
de Groot, H. J. M., 115
de Mele, M. F., 1599
Della Gatta, G. (ed.) 1313–1566, iii, iv
Dencker, L., 1269, 1271
Desai, M. A., 1147
Dieffenbacher, A., 1153, 1163, 1173, 1183, 1191, 1659
Doh, M-K., 687
Doller, D., 1567
Domalski, E. S., 1415
Dunitz, J. D., 177
Durst, R. A., 907

Eaton, D. F., 1003
Eberson, L., 205
Edmonds, J., 763, 778
Egge, H., 491
Eisch, J. J., 365
Ekins, R., 1269, 1286
Eliel, E. L., 1591
Ellis, F., 373
Englert, G., 59
Erker, G., 797
Esser, G., 763, 775

Fazen, P. J., 407
Ferrari, M., 1089
Fersht, A. R., 187
Findenegg, G. H., 1495
Folkers, J. P., 821
Folkersma, A., 1183
Frank, H. A., 109, 115
Franks, F., 1367
Friedman, H. L., 1347
Frye, S. V., 1591
Fryzuk, M. D., 845
Fukada, Y., 171
Fukushima, N., 1743
Furumiya, A., 1793

Galus, Z., 1705
Gavrichev, K. S., 1341
Gebhard, R., 115
Geisberger, G., 351
Gella, F. J. (ed.) 1081–1198
Gener, J., 1131
Gergely, A., 597
Ghebremichael, F., 1381
Gillespie, S. E., 1419
Głab, S., 1247, 1805
Glikmanas, G., 1123
Glinz, E., 89
Godovikov, N. N., 357, 835
Goli, M. B., 71
Gómez-Hens, A., 1083
Goudriaan, J., 763, 772
Gourmelin, Y., 1123
Grasselli, J. G., 1781
Greenberg, J. H., 1341
Greenwood, N. N., 317
Griepink, B., 907
Grimes, R. N., 369
Gritzner, G. (ed.) 1677–1826, iv
Grobecker, K. H., 1199
Grolier, J-P. E., 1427
Groneberg, R. D., 555
Gros, E. G. (ed.) 1567–1676
Grosse, H-J., 786
Grosveld, G., 1105
Guillet, J. E., 917
Gutmann, V., 1715

Haas, A., 1577
Haber, J., 1227
Haddad, T. S., 845
Haeckel, R., 301
Hagemeijer, A., 1105
Hakomori, S., 473
Hall, I. H., 415
Hatanaka, H., 373
Hatley, R. H. M., 1367
Hawthorne, M. F., 327
Hefter, G. T., 1749
Hehre, W. J., 283
Heinzinger, K., 1733
Hendrickson, D. N., 1503
Hendrikse, P. W., 1183, 1191, 1659
Herber, R. F. M. (ed.) 1199–1312, iii, 1213
Hermanek, S., 399
Hiltner, A., 961
Hortelano, E. R., 1591
Hosmane, N. S., 375
Huang, L., 687
Hug, G. L., 289
Hulanicki, a., 639, 1247, 1805
Hutney, J., 535

Ichikawa, Y., 499
Ikeda, H., 223
Ingman, F., 639, 1247
Ishikawa, M., 851
Islam, S. M., 1725
Ito, M., 13
Itoh, K., 1221
IUPAC-IUPAP Transfermium Working Group, 879
Iwamura, H., 1003
Izatt, R. M., 1419

Jäger, E.-G. (ed.) 643–796, iii
Jarrell, H. C., 529
Javier Gella, F., iii, 1131
Jenkins, R., 735
Jones, K., 403

Kabalka, G. W., 379
Kahn, S. D., 283
Kaito, A., 1793
Kamerling, J. P., 465
Kampel, V. Ts., 357, 835
Kapmeyer, W., 1135
Karas, M., 491
Kasprzak, K. S., 1269
Kato, M., 545
Katoh, T., 123
Kaufmann, D. E., 383
Kawasaki, N., 687
Kay, R. L., 1393
Kehlen, H., 1511
Keizer, A. de, 1495
Kellis, J. T., Jr., 187
Kennedy, J. D., 317
Khachik, F., 71

Kimata, K., 545
Kiss, T., 597
Kleykamp, H., 1401
Klump, H. H., 1357
Kobata, A. (ed.) 465–642, iii, iv
Kochi, J. K., 255
Koike, Y., 545
Koochaki, Z., 1147
Köster, R., 387
Kresge, A. J., 213
Kulichikhin, V. G., 925
Kurfürst, U., 1205

Laibinis, P. E., 821
Larsson, B. S., 1269, 1271
Lazarev, V. B., 1341
Le Floch, P., 855
Ledford, A. E., Jr., 1415
Lee, R. T., 499
Lee, T. R., 821
Lee, Y. C., 499
Lehmann, H. P., 1307
Levillain, P., 1081
Lewis, D. F. V., 1435
Li, L., 535
Liaaen-Jensen, S., 1
Linti, G., 351
Lipscomb, W. N., 335
Liu, D., 1793
Liu, L., 411
Liu, Y-F., 427
Liu, Y., 1269, 1298
Lobinski, R., 1627
Loderer, D., 351
Lugtenburg, J., 115
Luquet, M. P., 1491
Lusby, W. R., 71
Lyklema, J., 895
Lynch, A. T., 407

Maeder, D. L., 1357
Magers, D. H., 335
Maier, G., 275
Manne, R., 735
Marcus, Y., 1647
Marczenko, Z., 1627
Marinetti, A., 855
Martell, A. E., 1015
Martinek, K., 1527
Masuda, T., 1793
Mathews-Roth, M. M., 147
Mathey, F., 855
Matouschek, A., 187
Matsuno, T., 81
Matteson, D. S., 339
Mayer, H., 35
Meller, A., 395
Memming, R., 569
Michalski, T., 1495
Miki, W., 141
Miller, B., 569
Mimuro, M., 123
Mingos, D. M. P., 807
Mirabelli, M. G. L., 407
Miyamoto, J., 747
Miyashi, T., 223
Mizutani, A., 545
Moezzi, A., 859
Mol, P. C., 483
Moore, D. R., 1609
Mordret, F. X., 1163, 1173
Morishima, S., 223
Moriwaki, H., 157
Morrison, G., 1465
Mozhaev, V. V., 1527
Mullins, J. T., 483
Mussini, T., 1647
Muto, Y., 157

Nakajima, A., 1793
Nakanishi, K., 161
Nakayama, K., 1793
Nefedov, O. M., 231
Nefedov, V., 681
Neu, F. A., 1435
Neumaier, M., 1097
Nicolaou, K. C., 555
Niki, K., 1759
Nöth, H., 351

Ogata, N., 951
Ohaku, H., 223
Ohtaki, H., 1743
Okamoto, T., 1793
Okita, T. W., 535
Okken, P., 763
Oliver, J. P. (ed.) 797–916, iii
Osakada, K., 687
Oscarson, J. L., 1419
Otto, S., 747
Owens, T. G., 109
Ozawa, F., 687
Özer, U., 787

Paetzold, P., 345
Parak, F., 1269, 1301
Park, H-M., 483
Paule, R. C., 1415
Paust, J., 45
Pauwels, J., 1199
Peden, M. E., 907
Peijnenburg, W. J. G. M., 1667
Pelter, A., 403
Pestana, D. C., 859
Peter-Katalinic, J., 491
Petrie, M. A., 859
Petrii, O. A., 711
Pfander, H., 23
Platé, N. A., 925
Plesek, J., 399
Porter, W. H., 1119
Power, P. P., 859
Preiss, J., 535
Price, C. P., 1111
Pulvin, S., 1491

Qu, T., 1269, 1298

Raineri, F. O., 1347
Ramachandran, P. V., 307
Randerath, E., 1269, 1283
Randerath, K., 1269, 1283
Randzio, S. L., 1409
Rappé, A. K., 867

Rappoport, Z. (ed.) 177–306, iii, iv
Rattay, W., 351
Rätzsch, M. T., 1511
Reilly, M. L., 1415
Rettig, S. J., 845
Rialdi, G., 1483
Rice, K., 499
Rigg, J. C., 1307
Ringpfeil, M., 1527
Ritt, M. C., 1435
Robin, R., 735
Rode, B. M., 1725
Rothert, J. E., 907
Rowan, R. M., 1141

Salzbrenner, E., 351
Sano, K., 373
Schacht, W., 383
Schiedt, K., 89
Schindler, P. W., 1697
Schneider, G. M., 1313
Schumann, H., 813
Schwing-Weill, M. J., 1435
Seferis, J. C., 1609
Sénémaud, C., 735
Serra, J., 1131
Serrano, L., 187
Shafii, B., 365
Shaik, S. S., 195
Shaw, B. R., 415
Shaw, J. A., 483
Sheppard, N., 887
Shichida, Y., 171
Shoner, S. C., 859
Shreve, A. P., 109
Sigee, D. C., 1269, 1277
Silverman, S. J., 483
Sinaÿ, P., 519
Slanina, J., 763
Slikkerveer, F. J., 1183
Smart, N. A., 747
Smith, I. C. P., 529
Smith, K., 403
Smith, R. M., 1015
Smith-White, B., 535
Sneddon, L. G., 407
Soloway, A. H., 411
Somsen, G., 1687
Son, T., 687
Sood, A., 415
Sorai, M., 1503
Sóvágó, I., 597
Speranza, M., 243
Spielvogel, B. F., 415
Stahl, B., 491
Stanton, J. F., 335
Steering Committee on Biophysical Chemistry, 1527
Stein, R. S., 941
Stibr, B., 399
Su, K., 407
Sunshine, I., 1117
Suzuki, A., 419
Suzuki, S., 545
Sweet, W. H., 373

Takahashi, Y., 223
Talroze, R. V., 925
Tang, X., 789
Tans, P. P., 763, 766
Taube, H., 651
Tavares, T. M., 763, 791
Tiné, M. R., 1455
Tjälve, H., 1269, 1271
Todd, J. F. J., 1541
Tokuda, K., 1759
Tóth, K., 907
Trasatti, S., 711
Trautman, J. K., 109
Traylor, T. G., 265
Truchaud, A., 1123
Tschersich, L., 1511
Turner, D. R., 763, 768

Ullberg, S., 1269, 1271
Usiatinsky, A. Ya., 357, 835

Vadgama, P., 1147
Vahrenkamp, H., 643
Valenta, P., 1251
van der Hoef, K., 115
van der Plas, D. C., 1105
van Leeuwen, H. P., 1251
Vasella, A., 507
Violette, C. A., 109, 115
Vis, R. D., 1269, 1295
Visser, B. F., 1307
Vitagliano, V., 1441

Waggoner, K. M., 859
Wakeham, W. A., 1519
Walker, J. S., 1381
Wang, X., 1269, 1298
Wänninen, E., 639
Wapstra, A. H., 879
Watkins, W. M., 561
Whicher, T., 1111
Whitesides, G. M., 821
Wilhelm, E., 1427
Wolf, B. A., 1511
Wolff, J. P., 1163, 1173
Wong, T-C., 499
Wu, C-C., 427
Wu, L., 1793

Xiu, L., 1793
Xu, H., 1347

Yagi, K., 1793
Yongyai, Y., 1725
Yalpani, M., 387
Yamamoto, A., 687
Yamamoto, Y., 423
Yolken, R. H., 1127
Yoshida, K., 545
Yoshizawa, T., 171
Yvert, J. P., 1123

Zaidlewicz, M. (ed.) 307–464, iv
Zentgraf, B., 1527
Zhang, G., 1793
Ziegler, T., 873

Subject Index

R = Commission Report; Asterisk (*) = Nomenclature Report (Recommendations 1991)

000–000 = inclusive page numbers of symposium/conference

AAS (atomic absorption spectrometry) and matrix composition of organic reference materials 1213
direct furnace, determination of lead in oils and fats by 1183R
direct furnace, determination of phosphorus in oils and fats by 1191R
internal standard, with solid sampling technique 1221
solid sampling Zeeman, in reference materials 1199
*Abbreviations for experimental techniques in surface science and chemical spectroscopy 887R
Absorption coefficients, molar, of transient species in solution 289R
transfer and dissipation of light energy in carotenoids photosynthesis 123
Achiral carotenoids, synthesis of 35
Acid rain (wet deposition), analysis of 907R
Acyclic retinoids and cancer chemoprevention 157
Alkenyl carbanions stabilised by an α-boron atom 403
Allylic diboranes 361
Alternative refrigerant properties measurement and correlation program at NIST 1465
Amino acid-18 crown 6 and -cryptand 222 complexation reactions 1435
Analysis of residues of dicarboximide fungicides in food 747R
of wet deposition (acid rain) 907R
Analytical techniques for trace organic compounds 1637R
Animal(s) carotenoids, biological functions and activities 141
carotenoid metabolism in 89
Anionic constituents, determination by ion chromatography 907R
Anomeric center, new reactions and intermediates involving 507
Antigens, structure, biosynthesis and genetic regulation of carbohydrate 561
Application of continuous thermodynamics to polymer fractionation 1511
*Aqueous dispersions of solids, electrified interfaces in: nomenclature, symbols, definitions 895R
solutions at elevated temperatures/pressures, thermodynamics of interactions in 1419
Aromatic character, multiple bonding, π-bonding 859
compounds, borylation of 395
Assessment of uncertainties in projected concentrations of CO_2 763R
Asymmetric coexistence curves in an exactly solvable model of binary liquid mixtures 1381
synthesis and Cram's (chelate)rule 1591
with boronic esters 339
boron approach to 307
Atmosphere, assessment of uncertainties in projected concentrations of CO_2 in 763R
Atomic absorption spectrometry, *see* AAS
Atomic spectroscopy, solid sampling with, 4th Intl. Coll., Jülich, Oct. 90 1199–1226
weights of the elements 1989 975R
Automation and new technology in clinical laboratory, 4th Intl. Cong., Barcelona, Oct. 90 1081–1152
in immunoassays 1123

Benzo[*a*]pyrene in oils and fats, determination by reversed phase HPLC 1659R
Benzoannulated cycloboranes 383
Binary liquid mixtures, asymmetric coexistence curves in an exactly solvable model of 1381
η^2-binding by osmiumammines 651
Biochemical analyses of retinal proteins in chicken cone cells 171
applications of boron cluster chemistry 327
Biological functions and activities of animal carotenoids 141
materials, determination of Mo in 1627R
systems, isotopic and nuclear analytical techniques in 1269R
Biomimetic chemistry, kinetics and mechanism studies in 265
Biosensors, chemical sensors and, nearer the patient 1147
Biosynthesis of carotenoids 101
of starch, regulatory mechanisms involved in 535
Bis(9-borabicyclo[3.3.1]nonane), chemistry of 387
Borane chemistry, polyhedral 317
Boranes, the chiral 399
Borirenes and boracarbenoid intermediates, synthesis of 365
Boron analogues of amino acids, from, to boronated DNA 415
approach to asymmetric synthesis 307
based ceramics, polymeric precursors to 407
chemistry, 7th Intl. Symp., Toruń, July/Aug. 1990 307–426
cluster chemistry, biochemical applications 327
neutron capture therapy for tumors 373
nitrogen chemistry–I 345
nitrogen chemistry–II 351
substituted carboranes 357
Boronated DNA: potential new pharmaceuticals and neutron capture agents 415
Boronic esters, asymmetric synthesis with 339
Borylation of aromatic compounds 395
Butenolide carotenoids and retinoids, synthesis of 13

^{13}C magic angle spinning NMR studies in *R. sphaeroides* reaction center 115
Calorific content of municipal solid waste, assessing credibility of 1415
Calorimetric study of pure and mixed solvent systems 1687
Calorimetry, densitometry and ultrasonics 1427
scanning, with inducing variables and multi-output signals 1409
Cancer chemoprevention, acyclic retinoids and 157
monitoring, oncogenes and 1105
Carbanions, alkenyl, stabilised by an α-boron atom 403
Carbohydrate(s) antigens, structure, biosynthesis and genetic regulation of 561
as constituents of yeast cell wall and septum 483
carbohydrate interactions, in cell recognition 473
chains, xylose-containing 465
mass spectrometry in analysis of complex 491
15th Intl. Symp., Yokohama, Aug. 90 465–568
Carbon dioxide in the atmosphere 763R
Carbonylation reactions catalyzed by Pd complexes, mechanisms of 687
Carboranes as building blocks in organometallic synthesis 369
Carboranyl derivatives of Hg and Tl as synthons 357
derivatives of nontransition metals 835
nucleic acid precursors for use in neutron capture therapy of tumors 411
Carotenoid(s) and retinoids, commercial 45
animal, biological functions and activities 141
biosynthesis of 101
butenolide, synthesis of 13
in fruits, vegetables and human plasma 71
in photosynthesis 109, 123

marine 1
medical applications of 147
metabolism as a preparation for function 131
metabolism in animals 89
NMR of 59
separation, identification, and quantification by HPLC 71
synthesis of achiral 35
synthesis of optically active 23
9th Intl. Symp., Kyoto, May 90 1–176
*Carry-over effects in clinical chemistry, description and measurement of 301R
Catalysis with Zr complexes 797
heterogeneous, on Pt 821
*Catalyst characterization, manual on 1227R
Catalytic functionalization reactions of alkynes at transition metal complexes 829
Cation-radical intermediates, nature and role of 223
Cell recognition, carbohydrate-carbohydrate interaction as an initial step in 473
Ceramics, boron based 407
CF/PEEK laminates, toughness characterization of 1609R
Charge-transfer excitation of molecular complexes 255
Chemical analysis, metal buffers in – Part II 639R
element, new, to be recognized, criteria that must be satisfied for 879R
interactions in solutions at elevated temperatures and pressures, thermodynamics of 1419
sensors and biosensors: nearer the patient 1147
sensors, definitions and classification 1247R
* spectroscopy, English-derived abbreviations for experimental techniques in 887R
thermodynamics, 11th IUPAC Conf., Como, Aug. 90 1313–1526
Chemistry of bis(9-borabicyclo[3.3.1]nonane) 387
of phosphorus-carbon double bonds 855
Chicken cone cells, biochemical and photochemical analyses of retinal proteins in 171
Chiral boranes 399
drugs, resolution of 1119
Chromatography, capillary gas, determination of mono- and diglycerides by 1153R
HPLC, determination of polymerized triglycerides by 1163R
HPLC, determination of triglycerides in terms of partition number by 1173R
HPLC, separation of carotenoids by 71
ion, determination of anionic constituents by 907R
reversed phase HPLC, determination of benzo[*a*]pyrene in oils and fats by 1659R
Classical mechanics, thermodynamic quantities from 1327
*Clinical chemistry, description and measurement of carry-over effects in 301R
chemistry, fluorimetry as applied to 1083
chemistry, spectroscopic methods for 1081
laboratory, automation in, 4th Intl. Cong., Barcelona, Oct. 90 1081–1152
utility of acute phase proteins, measurement and 1111
Cluster(s) chemistry, biochemical applications of boron 327
chemistry, metal, theoretical aspects 807
ligand sphere reactivity of organometallic 643
Collagen composite systems, hierarchical structure of 961
Complexes of glycine, critical survey of stability constants of 597R
mechanisms of carbonylation reactions catalyzed by Pd 687
molecular, charge transfer excitation of 255
Computational methods in solution chemistry 1725
*Computer readable form, JCAMP-DX, a standard format for exchange of IR spectra in 1781
simulation studies of absorption, pore condensation and critical-point shifts 1495
Condensation polymers and their applications as new composite and opto-electronic materials 951
Conducting properties of poly[(disilanylene)butenyne-1,4-diyls] 851
Conductometric analysis of polyelectrolytes in solution 1251R
Coordination at solid surfaces, investigations on atomic scale 697
chemistry, 18th Intl. Conf., Gera, August 1990 643–710
compounds, ESCA investigations of 681
sphere of transition metals, P–C double bonds in 855
Cram's (chelate)rule, asymmetric synthesis and 1591
Criteria that must be satisfied for discovery of new element to be recognized 879R
Cross-coupling reaction of organoboron derivatives with organic halides 419
Crystals, phase transitions in molecular 177
Current state of our understanding of ionic mobilities 1393
Curve crossing diagrams as general models in physical organic chemistry 195
Cycloboranes, benzoannulated 383

Density functional theory as a practical tool 873
*Derived quantities, nomenclature of 1307R
Determination of lead by direct graphite furnace AAS 1183R
of Mo in biological materials 1627R
of mono- and diglycerides by capillary GC 1153R
of phosphorus by direct graphite furnace AAS 1191R
of polymerized triglycerides in oils and fats by HPLC 1163R
of triglycerides in terms of their partition numbers by HPLC 1173R
Diagnosis, molecular, gene amplification in 1097
of genetic diseases by DNA technology 1089
Dialkylamino-(dihalogeno)boranes, use in borylation of aromatic compounds 395
Diborane pyrolysis sequence, role of theory in 335
Diboranes, allylic 361
Dicarboximide fungicides in food, analysis of residues of 747R
Diffusion in multicomponent systems 1441
Discotic phases, from bonding problems to 813
DNA technology, diagnosis of genetic diseases by 1089
Drugs, chiral, resolution of 1119

*Electrified interfaces in aqueous dispersions of solids 895R
Electroanalysis, organic analytical reagents in 1805R
Electrochemistry, real surface area measurements in 711R
Electrode reaction: $2Cl^- \rightleftarrows Cl_2 + 2e^-$, kinetic parameters of 1759R
reactions, influence of solvents on rate of 1705
photoreactions of small-ring compounds 223
Electron-transfer, intramolecular, in mixed-valence complexes 1503
Electronic spectroscopy, radical ions in low temperature matrices for 1003R
Electrooxidation of glucose formed on Pt electrodes 1599
Electrophiles, gas-phase reactivity of five-membered hetero-aromatics toward 243
Elementary reaction steps in organometallic chemistry 873
Elements, atomic weights of, 1989 975R
isotopic compositions of, 1989 991R
new, to be recognized, criteria for 879R
EMF data, extrapolation of, to infinite dilution 1647R
Emulsions, ice crystallization induced in droplets dispersed within 1491
Enols, generation and study of 213
Enthalpy changes, stability constants for nucleotide complexes and accompanying 1015R
Environmental hydrolysis processes, predicting 1667R
Enzyme(s), natural sources of more stable 1528R
stability, increase by immobilization and treatment with low mol. wt. reagents 1533R
stability, increase of, by protein engineering 1538R
stability, practical importance of 1527R
ESCA investigations of coordination compounds 681
ETA-AAS, statistical treatment of solid sampling data of heterogeneous samples 1205
*Experimental techniques in surface science, abbreviations for 887R
Extrapolation of EMF data to infinite dilution 1647R

Fast atom bombardment mass spectrometry in carbohydrate analysis 491
Field ion microscopic techniques, study of coordination at solid surfaces by 697
Fluid system, high pressure investigations on 1313

Fluids in pores, experimental and computer simulation studies 1495
thermodynamics of 1427
Fluoride solvation – the case of the missing ion 1749
Fluorimetry as applied to clinical chemistry 1083
Food, analysis of residues of dicarboximide fungicides 747R
Functional groups, periodic system of 1577
Functionalisation of saturated hydrocarbons 1567
Fundamental considerations about liquid water 1715

Gas-phase reactivity of five-membered hetero-aromatics toward electrophiles 243
species of importance to ozone depletion 1449
Gene amplification in molecular diagnosis 1097
Generation of enols and other reactive species 213
Genetic code, thermodynamic basis of 1357
diseases, diagnosis by DNA technology 1089
Gif and all that 1567
Glass transition in liquids and plastic crystals, thermodynamic aspects of 1387
Glucose and glucose residues, voltammetric electrooxidation of 1599
Glycerides, mono- and di-, determination by capillary GC 1153R
polymerized tri-, determination by HPLC 1163R
tri-, determination in terms of transition numbers by HPLC 1163R
Glycine, critical survey of stability constants of complexes of 597R
Glycolipids, ^2H NMR investigations 529
Glycosaminoglycan chains of proteoglycans 545
Glycosylation reactions 519

Hetero-aromatics, gas-phase reactivity of five-membered, toward electrophiles 243
Heterocarboranes, main group 375
Heterogeneous catalysis on Pt and monolayers on metal and metal oxide surfaces 821
Heuristic principles, periodic system of functional groups: formalism only or 1577
Hierarchical structure of collagen composite systems 961
High frequency permittivity in investigation of solutions 1473
High pressure investigations on fluid system 1313
High-Tc superconductors, thermodynamics of 1341
HPLC, determination of polymerized triglycerides by 1163R
determination of triglycerides by 1173R
determination of benzo[*a*]pyrenes by 1659R
separation and identification of carotenoids by 71
Hydrocarbons, selective functionalisation of 1567

Ice crystallization induced by AgI and bacteria 1491
Immobilized ribonuclease A, thermodynamics of 1483
Immunoassay(s), automation in 1123
nephelometric, with shell/core particles 1135
Immunodiagnosis, latex agglutination procedures in 1131
Influence of solvents on rate of electrode reactions 1705
*Infrared spectra in computer readable form 1781R
Inorganic complexes, solvation and reactivity of 1677
Inorganic functional groups 665
Interactions in solutions 1687
Intermediates with low-coordinated C, Si and Ge atoms 231
Internal standard AAS with the solid sampling technique 1221
International carbohydrate award iv (April)
Intramolecular electron-transfer in mixed-valence complexes, phase transitions arising from 1503
Intrinsic characterization of CF-reinforced thermoplastic composites 1609R
Ion chromatography, determination of major anionic constitutents by 907R
hydration complexes in solution, structure and reactivity of 1347
Ionic mobilities, current state of our understanding 1393
Isoelectronic B-P, B-As, Al-N, Zn-S compounds 859
Isotopic compositions of the elements, 1989 991R
techniques in biological systems: a critical survey 1269R

*JCAMP-DX, a standard format for exchange of infrared spectra 1781R

Kinetic(s) aspects of binding reactions of O_2 on Co(II) complexes 1455
parameters of electrode reaction: $2Cl^- \rightleftarrows Cl_2 + 2e^-$ 1759R
and mechanism studies in biomimetic chemistry 265

Lanthanoids, phosphine complexes of 845
Laser desorption mass spectrometry in analysis of complex carbohydrates 491
Latex agglutination procedures in immunodiagnosis 1131
Latin american chemical congress, 19th, Buenos Aires, Nov. 90 1567–1608
LCAO molecular orbital theory in organometallic chemistry 839
Lead in oils and fats, determination by direct graphite furnace AAS 1183R
Lectins, topography of binding sites of animal 499
Lego way: curve crossing diagrams as general models in physical organic chemistry 195
Ligand sphere reactivity of organometallic clusters 643
view, topography of binding sites of animal lectins 499
Liquid water, fundamental considerations about 1715
Liquids, glass transition in, thermodynamic aspects 1387
Low-coordinated C, Si and Ge atoms 231

Macromolecules, 33rd IUPAC Symposium, Montréal, July 1990 917–974
Main group heterocarboranes 375
group metallocenes with substituted cyclopentadienyl ligands 813
*Manual on catalyst characterization 1227R
Marine carotenoids 1
Mass spectrometry in trace organic analysis 1637R
* recommendations for nomenclature and symbolism for 1541R
Matrices, production of radical ions in low temperature 1003R
Mechanical properties of ultra-high molecular weight polyethylene 1793R
Mechanisms of double and single carbonylation reactions 687
Medical applications of carotenoids 147
imaging, organoboranes in modern 379
Membrane surface orientation and motion of glycolipids 529
Mesophase polymers in the coming decade 925
Metabolism, carotenoid, as a preparation for function 131
Metal atoms, reactivity of multiple bonds between 665
Metal buffers in chemical analysis–II: practical considerations 639R
chelates, radiolabeling of monoclonal antibodies with 427R
cluster chemistry, theoretical aspects 807
Metallocenes with substituted cyclopentadienyl ligands 813
Metalloenzyme model systems 265
Microbial nucleic acids, quantitation of 1127
Microsize droplets dispersed within emulsions, ice crystallization induced in 1491
Missing ion, the case of the 1749
Mixtures, a coherent approach to the thermophysical properties of 1519
Models for selectivity in organic reactions 283
Molar absorption coefficients of transient species in solution 289R
Molecular biology, measurement and clinical utility of acute phase proteins 1111
biology, physical-organic 187
complexes in organic and organometallic chemistry 255
crystals, phase transitions in 177
design of B-10 carriers for neutron capture therapy 423
diagnosis, gene amplification in 1097
dynamics simulations, nucleation processes studied by 1743
dynamics studies of platinum/water interfaces 1733
orbital theory in organometallic chemistry 839
oxygen, binding reaction of, on Co(II) complexes 1455
Molybdenum in biological materials, determination of 1627R
Monoclonal antibodies, radiolabeling with metal chelates 427R
Multi-output signals, scanning calorimetry with 1409

Multilayer absorption, pore condensation and critical-point shifts 1495
Multiple bonding 859
bonds between metal atoms, reactivity of 665
Municipal solid waste, calorific content of 1415

N-bromoimide mechanisms, new and revived 205
N-glycoproteins, xylose-containing carbohydrate chains derived from 465
NaCl and CsF crystals, nucleation processes of 1743
Nephelometric immunoassay with shell/core particles 1135
Neutron capture agents, boronated DNA as potential therapy of tumors, carboranyl nucleic acid precursors for 411
therapy, molecular design and synthesis of B-10 carriers for 423
New chemical element to be recognized, criteria for 879R
New technology in TDM and toxicology 1117
NMR of carotenoids 59
*Nomenclature and symbolism for mass spectroscopy 1541R
* of derived quantities 1307R
* system for X-ray spectroscopy 735R
Non-aqueous and mixed solvents, extrapolation of EMF data to infinite dilution in 1647R
Nontransition metals, carboranyl derivatives of 835
Nuclear analytical techniques in biological systems: a critical survey 1269R
Nucleation processes of NaCl and CsF crystals 1743
Nucleic acids, microbial, methods for quantitation 1127
Nucleotide complexes with protons and metal ions, stability constants for 1015R

Oils, fats and derivatives, standard methods for determination of
benzo[*a*]pyrene by reversed phase HPLC 1659R
lead by direct graphite furnace AAS 1183R
mono- and diglycerides by capillary GC 1153R
phosphorus by direct graphite furnace AAS 1191R
polymerized triglycerides by HPLC 1163R
triglycerides in terms of partition numbers by HPLC 1173R
Oligosaccharides, synthesis of novel 555
Oncogenes and cancer monitoring 1105
Optically active carotenoids, synthesis of 23
Organic analytical reagents in electroanalysis 1805
halides, cross-coupling reaction of organoboron derivatives with 419
reactions, models for selectivity in 283
Organoboranes in modern medical imaging 379
Organoboron derivatives, cross-coupling reaction with organic halides 419
Organometallic chemistry, 14th Intl. Conf., Detroit, Aug. 90 797–878
chemistry, approximate LCAO molecular orbital theory in 839
chemistry, elementary reaction steps in 873
clusters, ligand sphere reactivity of 643
processes, scientific visualization 867
synthesis, small carboranes as building blocks in 369
Osmiumammines, η^2-binding by 651
Ozone depletion, thermodynamic properties of gas phase species of importance to 1449

Periodic system of functional groups 1577
Permittivity, high frequency, in investigation of solution properties 1473
Pesticides report, no. 28 747R
Phase transitions arising from intramolecular electron-transfer in complexes 1503
in molecular crystals from a chemical viewpoint 177
Phenomenological aspects of diffusion in multicomponent systems 1441
Phosphine complexes of the early metals 845
Phosphorus-carbon double bonds in coordination sphere of transition metals 855
Phosporus in oils and fats, determination by direct furnace AAS 1191R
Photochemical analyses of retinal proteins in chicken cone cells 171
Photochemistry, carotenoids in photosynthesis 109
*Photoelectrochemical energy conversion, terminology in 569R
Photoreactions of small-ring-compounds 223
Photorearrangements of α,β-unsaturated organoboranes 365
Photosynthesis, carotenoids in 109, 123
Physical organic chemistry, 10th Intl. Conf., Haifa, Aug. 90 177–288
chemistry, curve crossing diagrams as general models in 195
molecular biology 187
Plastic crystals, glass transition in, thermodynamic aspects 1387
Poly[(disilanylene)butenyne-1,4-diyls] and poly[(disilanylene)ethynylenes] 851
Polyelectrolytes in solution, conductometric analysis of 1251R
Polyethylene, ultra-high molecular weight, deformed near melting temperature 1793R
Polyhedral borane chemistry 317
Polymer fractionation, application of continuous thermodynamics to 1511
microstructures, scattering studies of 941
surfaces and interfaces, scattering studies of 941
Polymeric precursors to boron based ceramics 407
Polymers, condensation, as new composite and opto-electronic materials 951
mesophase, in the coming decade 925
Preconcentration by coprecipitation of Pb and Se with Ni/pyrrolidine dithiocarbamate complex 1221
Precursors for use in neutron capture therapy of tumors 411
Prospects for solar synthesis 917
Protein(s) engineering, increase of enzyme stability by 1527R
folding, pathway and stability of 187
measurement and clinical utility of acute phase 1111
stability of, at subzero temperatures 1367
Proteoglycans, glycosaminoglycan chains of 545
Pt electrodes in acid electrolytes, voltammetric electrooxidation of glucose formed on 1599
water interfaces, molecular dynamics studies of 1733

Quantitation of microbial nucleic acids 1127
Quantitative structure–activity relationships, use in environmental hydrolysis processes 1667R
Quantum mechanics, thermodynamic quantities from 1327

Radical ions in low temperature matrices, production of 1003R
Radiolabeling of monoclonal antibodies with metal chelates 427R
Reactions and intermediates involving anomeric center 507
Reactivity of inorganic complexes, solvation and 1677
of ion hydration complexes in solution 1347
Real surface area measurements in electrochemistry 711R
Reference materials, solid sampling AAS and matrix composition of organic 1213
materials, solid sampling Zeeman AAS in production and use of certified 1199
method of reticulocyte count 1141
Refrigerant properties measurement and correlation program at NIST 1465
Resolution of chiral drugs 1119
Reticulocyte count, reference method, quality control and automation of 1141
11-*cis*-retinal, a molecule uniquely suited for vision 161
Retinoids, acyclic and cancer chemoprevention 157
and carotenoids, commercial 45
synthesis of 13
xanthophylls as precursors of 81
Ribonuclease A, thermodynamics of immobilized 1483
Role of theory in studies of diborane pyrolysis sequence 335

Scanning calorimetry with inducing variables and multi-output signals 1409
Scattering studies of polymer microstructures, surfaces, and interfaces 941
Selective functionalisation of saturated hydrocarbons 1567
Selectivity in organic reactions, models for 283
*Semiconductor electrochemistry, terminology in 569R

Sensors, chemical, definitions and classification 1247R
Shell/core particles, nephelometric immunoassay with 1135
Silver iodide and bacteria, ice crystallization induced by 1491
Small-ring compounds, electron transfer photoreactions of 223
Solar synthesis, prospects for 917
Solid sampling AAS of organic reference materials 1213
data of heterogeneous samples 1205
technique, internal standard AAS with 1221
with atomic spectroscopy, 4th Intl. Coll., Jülich, Oct. 90 1199–1226
Zeeman AAS in reference materials 1199
Solid surfaces, coordination at, investigation by field ion microscopic techniques 697
Solid waste, calorific content of municipal 1415
Solution Chemistry, 22nd Intl. Conf., Linz, July 91 1677–1758
chemistry, computational methods in 1725
chemists view of surface chemistry 1697
properties, high frequency permittivity in investigation of 1473
thermodynamics of amino acid-18 crown 6 and -cryptand 222 complexations 1435
Solvation and reactivity of inorganic complexes 1677
Solvent(s) systems, calorimetric study of pure and mixed 1687
influence on rate of electrode reactions 1705
*Spectrochemical analysis—VIII: nomenclature, symbols, units and their usage in 735R
Spectroscopic methods for clinical chemistry 1081
*Spectroscopy, X-ray, nomenclature system for 735R
Spheroidene chromophore in *R. sphaeroides* reaction center 115
Spheroidenes, synthesis of ^{13}C- and ^{2}H-labelled 115
Stability constants for nucleotide complexes with protons and metal ions 1015R
constants of complexes of glycine, critical survey of 597R
of proteins at subzero temperatures 1367
Starch, regulatory mechanisms involved in biosynthesis of 535
Statistical treatment of ETA-AAS solid sampling data of heterogeneous samples 1205
Stereochemistry and catalysis with Zr complexes 797
Stoichiometric and catalytic functionalization reactions of alkynes 829
Structure-activity relationships for predicting rates of environmental hydrolysis processes 1667R
of ion hydration complexes in solution 1347
of ultra-high molecular weight polyethylene 1793R
Superconductors, high-Tc, thermodynamics of 1341
Surface area measurements in electrochemistry 711R
chemistry, a solution chemists view of 1697
Synthesis and properties of alkenyl carbanions 403
asymmetric, and Cram's (chelate)rule 1591
asymmetric, boron approach to 307
asymmetric, with boronic esters 339
carboranes as building blocks in organometallic 369
of B-10 carriers for neutron capture therapy 423
of borirenes and boracarbenoid intermediates 365
of novel oligosaccharides 555
of poly[(disilanylene)butenyne-1,4-diyls] 851
Synthetic methods of condensation polymers 951
Synthons for boron-substituted carboranes 357

TDM and toxicology, new technology in 1117
*Terminology in semiconductor electrochemistry and photoelectrochemical energy conversion 569R
Tetra-t-butyl-tetrahedrane, unusual reactions from 275
Theoretical aspects of metal cluster chemistry 807
studies of organometallic processes 867
Thermodynamic(s) and ecological consequences of stability of proteins at sub-zero temperatures 1367
aspects of binding reaction of O_2 on Co(II) complexes 1455
aspects of diffusion in multicomponent systems 1441
aspects of glass transition in liquids and plastic crystals 1387
basis of the genetic code 1357
continuous, application to polymer fractionation 1511
of amino acid-18 crown 6 and -cryptand 222 complexation reactions 1435
of chemical interactions 1419
of fluids 1427
of high-Tc superconductors 1341
of immobilized ribonuclease A 1483
of uranium–platinum metals systems 1341
properties of gas phase species 1449
quantities from quantum and classical mechanics 1327
Thermophysical properties of mixtures 1519
Thermoplastic composites, intrinsic characterization of continuous fibre reinforced 1609R
Topography of binding sites of animal lectins 499
Toughness characterization of CF/PEEK laminates 1609R
Toxicology, new technology in TDM and 1117
Trace organic analysis, mass spectrometry in 1637R
Transient species in solution, molar absorption coefficients of 289R
Tripodal polyphosphine ligands, stabilization by 829
Tumors, boron-neutron capture therapy for 373

Ultra-high molecular weight polyethylene 1793R
Unusual molecules – unusual reactions 275
Uranium-platinum metals systems, thermodynamics 1341

*Vacuum technology, an appendix of terms used in 1541R
Vision, 11-*cis*-retinal, a molecule uniquely suited for 161
Voltammetric electrooxidation of glucose and glucose residues 1599

Wet deposition (acid rain), analysis of 907R

*X-ray spectroscopy, nomenclature system for 735R
Xanthophylls as precursors of retinoids 81
Xylose-containing carbohydrate chains 465

Yeast cell wall and septum, carbohydrates as structural constituents of 483

Zirconium complexes, stereochemistry and catalysis with 797